Structure Chart

Friday, August 13, 2021 7:29 AM

Structure Chart

Modules : Each subtask is considered as modules

By value : Copy of variable is passed . (different Memory location)

By Reference : variable itself is passed (same memory location

- It can be either a function or procedure

Function returns a value

Procedure does not return a value

- Structure chart helps to understand the complex program and helps to identify the relation between modules

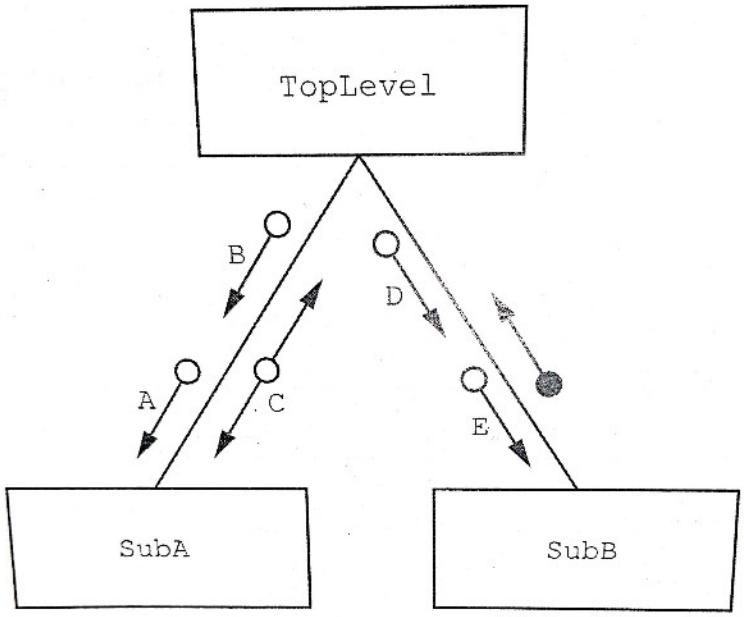
Header Of Function

values provided by function

variable that will be the Answer

Function Name (Name of variable : datatype , Name of variable : Datatype) Return Datatype

Symbol	Explanation
	value passed b/w modules
	Boolean value passed b/w modules
	Selection statement
	Repitition
	By reference (value changed)



Question:

2. M/J 20/P21/Q2/a
(a) Three modules form part of a program for a car rental company. A description of the

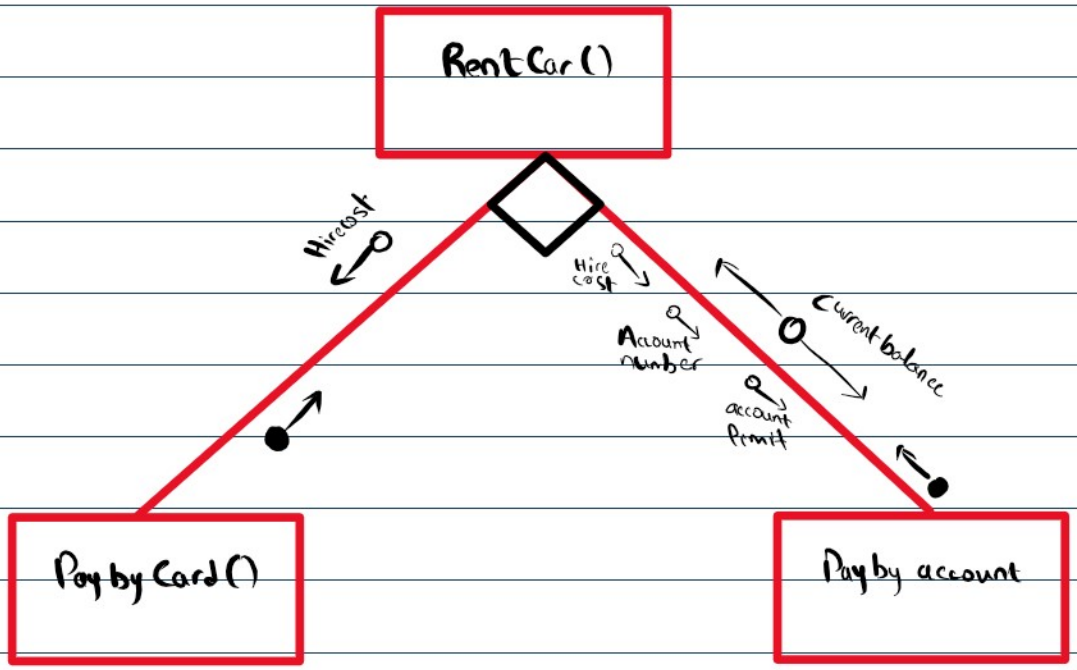
2. **M/J 20/P21/Q2/a**

(a) Three modules form part of a program for a car rental company. A description of the relationship between the modules is summarised as follows:

Module name	Description
`RentCar()`	A customer will pay for each car rental either by bank card or by using their account with the rental company.
`PayByCard()`	Called with parameter `HireCost`, representing the cost of the rental. Returns a `BOOLEAN` value to indicate whether or not the card payment was successful.
`PayByAccount()`	Called with parameters `HireCost`, `AccountNumber`, `CurrentBalance` and `AccountLimit`. • Checks whether `HireCost` plus the `CurrentBalance` would exceed the `AccountLimit`. If so, then the rental is not authorised. • If the rental is authorised, then the `CurrentBalance` is updated. • Returns a `BOOLEAN` value to indicate whether or not the rental was authorised.

By Reference

Draw a structure chart to show the relationship between the **three** modules and the parameters passed between them.



Question :

4. **O/N 19/P22/Q5**

The module headers for three modules in a program are defined in pseudocode as follows:

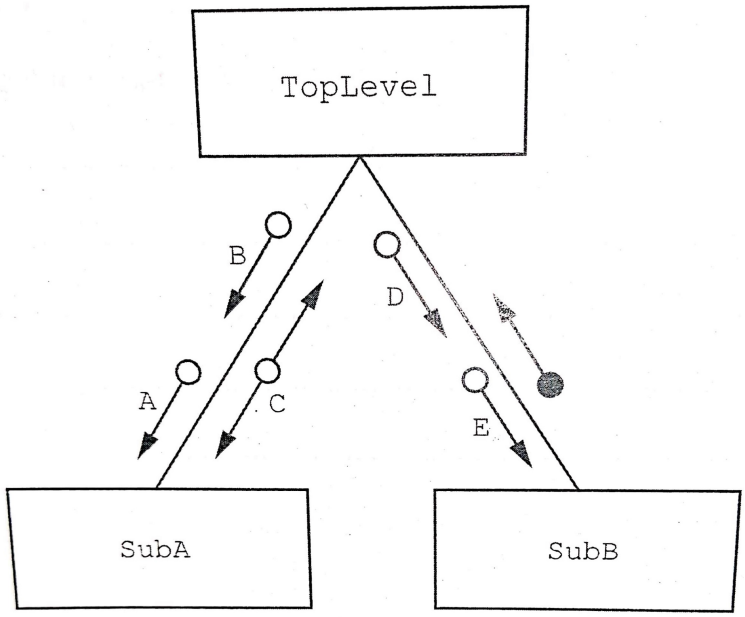
Pseudocode module header
`PROCEDURE Lookup(P4 : INTEGER, BYREF M4 : STRING)`
`FUNCTION Update(T4 : INTEGER) RETURNS INTEGER`
`FUNCTION Validate(S2 : INTEGER, P3 : STRING) RETURNS BOOLEAN`

A fourth module, `Renew()`, calls the three modules in the following sequence.

```
Validate()
Lookup()
Update()
```

Draw a structure chart to show the relationship between the four modules and the parameters passed between them.

Writing Pseudocode for module's header.



A, D : String

C : Char

B, E : Integer

Q1: Write pseudocode for header of module sub B

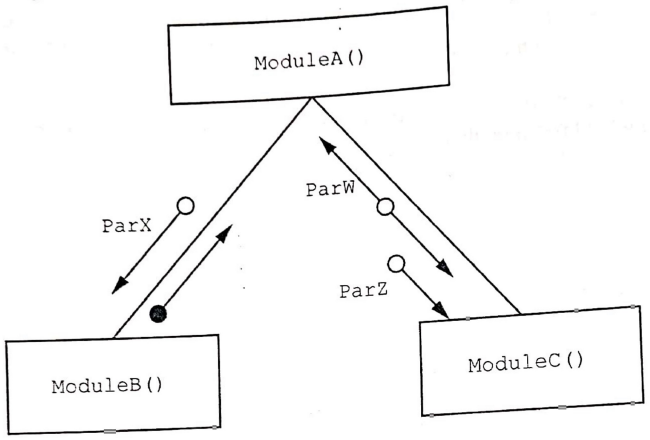
- You have to decide whether it is a function or procedure

FUNCTION SubB (D : string , E : Integer) Return Boolean.

Q2: Write pseudocode for header of module sub A

PROCEDURE SubA (A : string , B : Integer , By Ref C : Char)

(b) The following structure chart shows the relationship between three modules.



Parameter data types are:

```
ParW : REAL
ParX : INTEGER
ParZ : STRING
```

(i) Write the **pseudocode** header for module `ModuleB()`.

.....

.....

..... [3]

(ii) Write the **pseudocode** header for module `ModuleC()`.

.....

.....

..... [3]

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What are the features of structure chart.

- Hierarchy of modules
- Iteration
- Selection
- The parameters that are passed between the modules